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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,042	10/09/2003	Ulrich Augustin	071308.0445	8154

31625 7590 10/25/2004

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EXAMINER

BUI, THACH H

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 10/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/682,042

Applicant(s)

AUGUSTIN ET AL.

Examiner

Thach H Bui

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 1, "a first member", and "a second member" are not clearly recited in the Specification. See claim 17 for the same informality.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with informalities, too numerous to mention specifically. The following noted informalities are merely exemplary thereof. The claims should be revised to conform to U.S. Patent office practice.

Claim 1 is vague and indefinite because "compensation member having a thermal expansion coefficient higher than the first thermal expansion coefficient for filling said hollow space" renders the claim unclear. See claim 17 for the same informality.

Claim 5 is vague and indefinite because "first member" and "second member" renders the claim unclear. See claims 9, 11, 12, 15, 25, 27, 28 and 31 for the same informality.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 9-15, 17-23, 25-29, and 31-32 as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Lorraine et al. (U.S. Patent No. 6,755,353).

Lorraine et al. teach a temperature compensated actuator device with high thermal expansion capability due to temperature variation of the fuel injector (200) comprising a piezoelectric stack and/or actuator stack (the actuator stack comprises a plurality of piezoelectric elements) (100) having first and second ends along a central

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axis and having a thermal coefficient (Beta) (col. 8, lines 62-63). The actuator comprises a top plate (46) and a bottom plate (44) of which positioned in between the piezoelectric stack and the compensator are arranged. The top plate includes at least one opening through which the piezoelectric stack can be electrically contacted (col. 4, lines 19-23). The apparatus further comprises a metal tube spring arranged within the cavity between the piston late and the opening, (48, 260) coupling the top and bottom plate for preloading the compensator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8, 16, 24, and 30, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lorraine et al.

Lorraine et al. have all the features of the invention (as mentioned in the above paragraph) ; however, Lorraine et al. do not mention explicitly the thermal coefficient of about $11,5 \times 10^{-6}/K$. But Lorraine et al. teach a piezoelectric stack having a thermal coefficient (Beta) (col. 8, lines 62-63); therefore, it would have been obvious to one skilled artisan in the art to modify the teachings of Lorraine et al. to have a temperature compensated actuator device with a thermal coefficient of about $11,5 \times 10^{-6}/K$ to compensate to temperature variation of the fuel injector.

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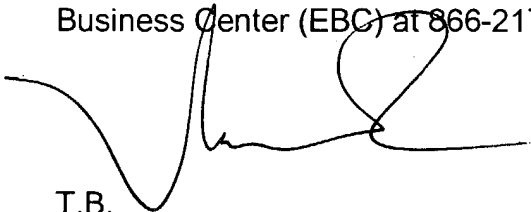
Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lorraine et al. ('127, '035), D'Arrigo and Sumrak et al. ('032, '066) are cited of general interest.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thach H Bui whose telephone number is 703-305-0063 and/or 571-272-4898. The examiner can normally be reached on Monday-Friday, 7:30-4 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on 703-308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



T.B.
10/18/2004